

IN THE CLAIMS:

What is claimed is:

1. A filter system for carotid endarterectomy comprising:

5 proximal and distal members each having a distal and a proximal end and at least first and second lumens, the distal ends each comprising an inflatable balloon and each first lumen being in fluid communication with the respective inflation balloon;

10 a middle section positioned between said proximal and distal members, the middle section having a third lumen in fluid communication with each of said second lumens, a fourth lumen in fluid communication with each of said first lumens and a first inflation port, and a fifth lumen in fluid communication with a second port; and

15 a vascular filter system comprising a guidewire insertable into the second port and advanced through the second lumen of the distal member, wherein each of the said inflation balloons is capable of being inflated simultaneously, said vascular filter system comprising (a) a filter membrane support structure, and (b) a filter membrane attached to said filter membrane support structure, said filter membrane having holes, 20 wherein said holes have variable diameters, and wherein said holes are from about 20 to about 300 microns in diameter.

2. The filter system of claim 1 wherein said holes are non-uniformly spaced.

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3. The filter system of claim 1 wherein said holes comprise fibers attached to said holes to increase embolic capture.